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Title : HOOKWORMS ARREST CALIFORNIA SEA LION POPULATION GROWTH

Category : Ecology

Student :

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Abstract : The California sea lion (Zalophus californianus) population has increased about 6 % annually for over 30 years and currently numbers over 200,000 animals in U.S. waters. At San Miguel Island there are about 100,000 sea lions. Hookworm (Uncinaria sp) infections became apparent in sea lions in 1992 and have increased in incidence and severity in the ensuing decade. In 2000 it appeared that increasing numbers of pups were dying of hookworm infections late in the season when between 4 and 8 months of age. In 2001 over 50% of the pups born were dead by age 4 months.

We conducted necropsies on 30 pups each month from June 2002 through February 2003. Gross and histological examinations were conducted on all major organs and systems. Worms were recovered from the intestines to describe the intensity of infections. In general the pattern of mortality casues was clear, with trauma and starvation responsible for deaths during the first month of life(June). In July through January hookworm infections were present in all pups examined. Worms appeared to cause anemia early in the period and from August onward bacterial infections associated with the hookworm infections were apparent as abscesses, peritonitis, pyothorax, encephalitis, meningitis and septicemia. The bacteria most commonly isolated from lesions and blood was Klebsiella pneumoniae.

Pup mortality in the first year of life has increased to about 65 % in the past few years. This has caused slowing of the population growth rate to about 1 % annually. If hookworm induced mortality continues, the population will begin to decline due to decreased female recruitment. It appears that parasitism rather than competition for food and space may limit the California sea lion population.